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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,109

06/29/2006

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EXAMINER

REDDY, KARUNA P

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,109	Applicant(s) MOSSEVELD ET AL.	
	Examiner KARUNA P. REDDY	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on 10/22/2009 has been entered. Claims 1-19 are cancelled; claims 20, 23, 26-27 and 31-36 are amended. Accordingly, claims 20-39 are currently pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 20-27, 29-31, 34-37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al (US 5,439,953) in view of Wendel et al (US 5,358,998).

Ritter et al disclose in examples 1-4 molding made by mixing components of the composition comprising polyvinyl acetate homo- or co-polymer dispersion comprising either polyvinyl alcohol or starch ether as protective colloid; potato starch and water. Extrusion temperatures in examples 1-4 fall within the claimed range of from 70⁰C to 150⁰C. It is noted that polyvinyl acetate has a T_g of 30⁰C and falls within the range of -30⁰C to +120⁰C recited in claim 25. The invention of Ritter et al disclose mixing

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thermoplasticized starch with thermoplastic water-insoluble polymers of synthetic origin to produce a modified polymer mixed product which ensures biodegradability of the materials and of molded articles thereof (column 2, lines 53-62) and read on the rotable molding of present claims 34-35. Conventional processing methods such as injection molding, extrusion molding, extrusion blowing and film blowing are employed (column 11, lines 7-10). See example 1, wherein poly(vinyl acetate) is present in amount of 16.2% by weight and potato starch in amount of 40.0% by weight.

Ritter et al is silent with respect to functional monomer, amount of protective colloid and polymer in the form of redispersible powder; and starch molding composition as an adhesive.

However, Wendel et al teach that aqueous polymer dispersions containing polymers and sugared starch (abstract). The polymer dispersions can be used in the production of moldings (col. 11, lines 13-15). Monomers which usually increase the internal strength are generally copolymerized in small amounts of from 0.5 to 10% by weight and include preferably N-methylolmethacrylamide (col. 5, lines 20-33). Suitable secondary surfactants include protective colloids in amounts of up to 5% by weight based on the amount of polymerized monomers (col. 6, lines 19-51-53). Notable property of the aqueous polymer dispersions is that they can be converted to redispersible polymer powders by known methods (col. 8, lines 46-49). Therefore, in light of the teachings in Wendel et al, it would have been obvious to one skilled in art at the time invention was made to use small amounts of from 0.5 to 10% by weight of N-methylol methacrylamide in the preparation of the polymer, of Ritter et al, stabilized by protective colloid, in amounts of up to 5% by weight, for realizing increased internal strength and to convert the thus obtained aqueous polymer dispersion to redispersible

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polymer powder in a manner known to one skilled in art for ease of handling, storage and transportation.

With respect to starch molding composition as an adhesive, given that the compositional requirements are met, it is the examiner's position that the composition of Ritter et al in view of Wendel et al is intrinsically capable of functioning as an adhesive.

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al (US 5,439,953) in view of Wendel et al (US 5, 358, 998), as applied to claim 31 above, in view of Miyamoto et al (JP 2002-020601).

The discussion with respect to Ritter et al in view of Wendel et al in paragraph 3 above is incorporated here by reference.

Ritter et al and Wendel et al are silent with respect to biodegradable polyester.

However, Miyamoto et al teach biodegradable polyester resin composition that can degrade at a desired rate without lowering strengths of resin and is used as an adhesive (abstract). Therefore, in light of the teachings in Miyamoto et al, it would have been obvious to one skilled in the art at the time invention was made to add biodegradable polyester resin to the molding composition / molding of Ritter et al in view of Wendel et al because Miyamoto et al teach that biodegradable polyester resin can degrade at a desirable rate without lowering strength and one of ordinary skill in the art would expect such an addition to the composition, of Ritter in view of Wendel et al, to provide the benefit of degradation of binder at a desirable rate. Furthermore, case law holds that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

5. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al (US 5,439,953) in view of Wendel et al (US 5, 358, 998), as applied to claim 27 above, and further in view of Famili et al (5,362,778).

The discussion with respect to Ritter et al in view of Wendel et al in paragraph 3 above is incorporated here by reference.

Ritter et al and Wendel et al are silent with respect to the properties of polyvinyl alcohol.

However, Famili et al teach extrudable PVOH compositions comprising modified starch. The product has improved modulus, reduced elongation and high relative humidity (abstract). Suitable PVOH is 75-99 mol% hydrolyzed and has solution viscosities of 3 to 55 cps at 20⁰C as a 4% aqueous solution (column 3, lines 4-10). Therefore, in light of the teachings in Famili et al, it would have been obvious to one skilled in the art at the time invention was made to use polyvinyl alcohol, having the recited degree of hydrolysis of 85 to 94 mol%, and a viscosity of 3 to 15 mPa.s, as protective colloid, in the polymer dispersion of Ritter et al in view of Wendel et al, for above mentioned advantages.

6. Claims 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al (US 5,439,953) in view of Wendel et al (US 5, 358, 998), as applied to claim 31 above, and further in view of Hashemzadeh et al (US 2002/0135086 A1).

The discussion with respect to Ritter et al in view of Wendel et al in paragraph 3 above is incorporated here by reference. Furthermore, Wendel et al teach that polymer

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dispersions can be used as binders for finely divided mineral and/or organic materials, in the production of moldings such as chip boards (col. 8, lines 27-33).

Ritter et al and Wendel et al are silent with respect to cellulose in the form of wood particles, wood fibers, wood meal or mixtures thereof.

However, Hashemzadeh et al teach binder composition comprising substantially similar polymer dispersions as that of Ritter et al and Wendel et al. The binder is used for forming articles from particulate materials such as mineral, fiber or natural materials which include wood shavings, wood, cellulose and others (paragraph 0028). Therefore, it would have been obvious to one skilled in art at the time invention was made to add wood shavings, wood or cellulose, of Hashemzadeh et al, to the composition of Ritter et al in view of Wendel et al prior to molding because Ritter et al in view of Wendel et al contemplate using the polymer dispersion as a binder in forming moldings from finely divided mineral and/or organic material and Hashemzadeh has shown successfully that substantially similar binders can be used for forming articles made from wood shavings, cellulose, wood and one of ordinary skill in the art would expect such a combination to work, motivated by expectation of success.

Response to Arguments

7. The objections, and rejections under 35 U.S.C. § 102 as set forth in paragraphs 3 and 4 in the preceding office action mailed 7/23/2009 are hereby overcome in light of the amendments and applicant's arguments filed 10/22/2009.

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8. Applicant's arguments filed 10/22/2009 have been fully considered but they are not persuasive. Specifically, applicant argues that (A) Ritter uses water dispersion and water necessary for starch digestion comes from the polymer dispersion. Therefore, replacing the polymer water dispersion in Ritter with a polymer in dry form would deprive the water source necessarily required in Ritter's process; (B) Wendel is drastically different from Ritter at least with respect to the use of starch and starch-to-polymer ratios.

With respect to (A), applicant's attention is drawn to Ritter et al (col. 9, lines 45-50) wherein it states - polymer dispersions are mixed with water depending on the example. Thus, applicant's argument that polymeric dispersion is the only source of water is not persuasive.

With respect to (B), Wendel is only used for its teaching that polymer dispersions comprising functionalized monomers provide increased internal strength, are redispersible (i.e. can be dispersed in water at a later stage) and the redispersible powder provides for ease of handling, storage and transportation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. P. R./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796